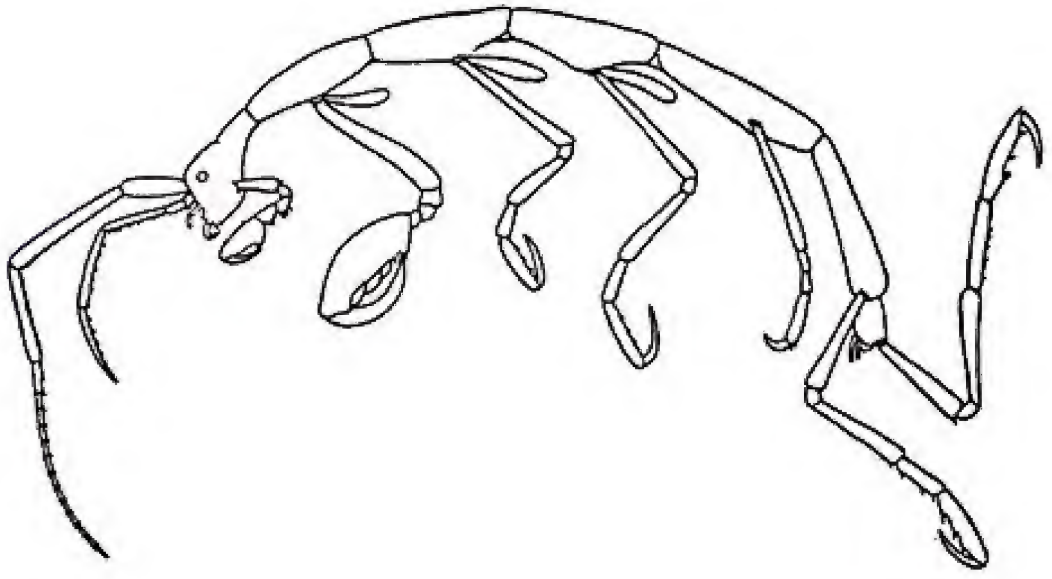
SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

May/June, 2015 SCAMIT Newsletter Vol. 34 No. 1



Phtisica marina Slabber 1769, after Vasilenko (1974). Whole animal.

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

Publication Date: 6 November 2015

Due to the additional April meeting with visiting polychaete scientists at the LACNHM, we did not hold a May meeting. The various Laboratories working on the Regional Bight Survey (Bight'13) also needed additional time to prepare for the Bight'13 QC Reconciliation meetings.

11 JUNE 2015, SPECIES LIST REVIEW COMMITTEE, SCCWRP

Attendees: Larry Lovell, Don Cadien (LACSD); Dean Pasko, Tony Phillips (DCE); Ron Velarde, Nick Haring (City San Diego); Kelvin Barwick (OCSD); Leslie Harris (LACMNH)

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

Don provided an introduction to the review of Ed 9 and development of Ed 10 of the SCAMT Species List, commenting on the list of non-controversial changes and the growing list of provisional species awaiting documentation to be included. Leslie asked about Ron's email exchange suggesting that species from Bight'13 would not be included until after Bight'13 QA has been completed, meaning Ed 11, even if voucher sheets exist. Don responded that there was an *a priori* decision to require outside expert confirmation of new species for addition to the list. With additional discussion we all came to an understanding that new species with voucher sheets or descriptive information as formal publication could be introduced to Ed 10, if the information had been widely distributed. Kelvin raised the issue that it was his understanding that new provisional species must have been included in reported data to be included on the Species List, and the Bight'13 data will not be reported until sometime in 2016.

There was significant discussion about the use of ID sheets to distinguish specimens relative to formal voucher sheets and what constitutes true distribution of a SCAMIT-ized voucher sheet. Larry commented that some of these image-filled ID sheets were beginning to substitute for a voucher sheet. Older voucher sheets had a higher bar for including inter-species comparisons and diagnostics characteristics; but adherence to this formatting has been mostly lost. Larry and Kelvin suggested that the requirement of a voucher sheet for new species be part of the Bight'13 Benthic Report recommendation.

In order to clear the list of "on-hold" provisional taxa, Nick suggested, again, to expand the definition of "publication" to include publication of voucher sheets, so that individuals preparing voucher sheets could receive some small reimbursement for their efforts. Some in attendance agreed that this might be an option.

Before moving on to the list, Nick asked the group to consider the current problems with the SCCWRP SQO Tool and the requirement that the tool use the SCAMIT Ed5 Species List. We decided that the limitation is with SCCWRP, not the requirement of the State of CA Regulation or anything else. Nick suggested that he would be able to perform the update, and distribute the updated list for confirmation and QA. However, there is an issue of non-reported taxa, such as those species reported by some non-public agencies and consultants who do analyses for smaller monitoring programs (e.g., Reynolds Desalination Facility, Space and Naval Warfare Systems Command, aka SPAWAR). Leslie confirmed that the SCCWRP SQO Guidance Document references SCAMIT Ed 5 instead of using language such as "most updated SCAMIT species list". This creates a problem for the updating the tool and be in conformance with the Guidance Document adopted by the State.

Dean suggested that perhaps SCAMIT should seek funding to pay a stipend to the SCAMIT President since SCAMIT's species listing is involved in so many State-sponsored tools (BRI, SQO, etc.), and the correct oversight of these efforts would be fairly time intensive (e.g., communicating with the State, SCCWRP, and other involved agencies).

With the observation by some that we can barely get funding from the agencies we serve, there was resignation that seeking the funds for an annual stipend was an impossible task, and we moved on to consider the changes to the SCAMIT species list to generate Ed 10.

We progressed forward quickly until we came upon the *Chaetozone*. Tony commented that he had presented a workshop on the various provisional taxa of *Chaetozone*, but they were not added to the list. This raised the issue of what are the requirements for inclusion of provisional (or new) taxa to the list, and whether or not they have been codified and distributed or posted to the website. We suggested that the Committee meet to set and codify these requirements. Kelvin suggested the use of an html document that included all the required information.

We concluded with a discussion of the necessary methods to distribute taxonomic information for inclusion in the next edition of the SCAMIT species listing. We covered three basic components to the process of getting new species, especially provisional taxa, vetted and confirmed so that they could be properly documented for inclusion to the SCAMIT species list.

Taxonomic Information – The following is the minimum amount of information required for a voucher or identification sheet to be posted to the SCAMIT website and distributed as a "valid" SCAMIT Sheet. (Final Draft Guidelines attached.)

- Taxa name (described or provisional) and abbreviated phylogeny (Phylum, Class, Order, Family)
- Authority (original describing authority and year OR describer of provisional taxon and month-year)
- Synonyms (if any)
- Location (Program, Station, Date of sample collection, Depth)
- Date of origination of sheet (may be different from publication date in SCAMIT NL)
- Known distribution (single site is OK if that is all that is available)
- Diagnostic characters
- Comparison with morphologically similar taxa with which it would be most easily confused
- Image(s) (drawn or photographs) – at least one demonstrating the diagnostic character
- Primary reference used to determine taxonomy

Vetting – The following is the recommended vetting process for a provisional or new species identification sheet to be posted to the website and distributed as a valid SCAMIT Voucher Sheet.

- SCAMIT meeting in which one or more of the more prominent SCAMIT members for that particular taxon are present to help confirm the identification or need for a provisional designation
- Distribution of provisional sheet with identifying characters via email to (1) prominent SCAMIT members for that particular taxon, or (2) the general SCAMIT list server
- We recommend requesting a 30-, 45-, or 60-day response.

Publication Date: 6 November 2015

Distribution – The following is the recommended distribution process for a SCAMIT Voucher or Identification Sheet, including the information described above, that would allow the taxon to be included in the SCAMIT Species List as a valid SCAMIT taxon. The following are not mutually exclusive, and a wide distribution (via email or newsletter) is required for inclusion in the SCAMIT Species Listing.

- SCAMIT Newsletter is the primary and preferred method of distribution. All voucher sheets will eventually be distributed within a SCAMIT NL, although the distribution of the final NL may lag behind the publication of the final voucher sheet (see below).
- Presentation at a SCAMIT meeting followed by (1) an email distribution to the SCAMIT membership or (2) publication in a SCAMIT NL

The final version of the approved Guidelines has been posted to the SCAMIT website, and is attached here.

The Committee was in agreement that there should be some effort expended to maintain a distinction between in-house provisional species and SCAMIT-ized taxa. Many provisional taxa start as an in-house provisional that is restricted internally to a specific agency or laboratory, as the taxonomist looks for additional specimens or attempts to get other members of their taxonomic team to recognize this seemingly new species. On occasion these in-house provisionals are shared with the greater SCAMIT community for comment. These in-house laboratory provisional taxa should maintain the use of the agency coding system (e.g., Agency/Taxonomist Code-#, such as *Genus* sp TP1 for Tony Phillips species 1). In most cases, a SCAMIT-ized provisional is given a letter designation (e.g., Isanthidae sp A SCAMIT 1989, whose synonymies include Anthozoa #96 Ljubenkov 1984).

22 JUNE 2015, BIGHT'13 INFAUNAL QA, LACSD

Attendees: Larry Lovell, Don Cadien, Chase McDonald, Bill Furlong, Terra Petry (LACSD); Dean Pasko, Tony Phillips (DCE); Kelvin Barwick, Danny Tang, Laura Terriquez, Ken Sakamoto, Rob Gamber (OCSD); Matt Hill, Chip Barrett, David Drumm (EcoAnalysts)

Business

Larry introduced the new Match/Not-match tables that compare the infauna identifications from a primary taxonomist with those of the secondary (QA) taxonomist for the Bight'13 samples. LACSD personnel provided the secondary taxonomy for all OCSD and EcoAnalysts samples, which were the samples being reviewed today. This is the first time that the QA Resolution Process would be performed via electronic files (i.e., Excel output), and so we welcomed comments and suggested improvements. Kelvin immediately suggested the addition of a simple taxonomic hierarchy.

The Match/Not-match table compares both the identification (species/taxon) name and the count (abundance) for that taxon, and produces a results table listing the original identification/count, the secondary identification/count, considering the specimens removed for voucher or further identification, and identifying those records that match and those that do not. The primary and secondary taxonomists then meet to discuss and resolve the differences.

Larry explained the importance of the use of the line numbers that identify each record begin resolved in the Lines Involved in Resolution column, the coding sheet describing the Discrepancy Classifications and Resolution Codes and their use in the corresponding columns, Taxa Change and Abundance Change columns, and the use of the inserted blank lines to add taxa not currently recorded in the Match/Not-match file. He also reminded everyone that this effort is directed at the primary taxonomist's identifications and that they were not to be concerned with recording errors

by the secondary taxonomist.

We also discussed the resulting QA data and use of that data to identify the types of errors committed and the use of those results to direct future SCAMIT meeting topics, not just with respect to taxa, but process or procedures and methods to reduce particular errors.

Sample review highlights: Taxonomic QC reconciliations were performed on five OCSD and three EcoAnalysts Bight'13 samples. The LACSD secondary taxonomists paired up with appropriate primary taxonomists from each lab, rotating between the two labs during the day. Specimens in need of resolution were pulled and reviewed for identification or count correction. Resolutions on not-match taxa for all samples were reached. The proper spreadsheet codes and notations were discussed. The taxonomic review process uncovered a couple interesting problems. The OCSD staff found that there were upload issues with the data reported from DCE taxonomists. Several taxa did not get reported out to the Match/Not-match table although the DCE taxonomists had reported the data in their data submission and Kelvin was able to confirm the data in his raw data file. Kelvin was going to have to investigate this problem further. Thankfully, it affected only five of several hundred records from two stations.

We also discovered the presence of another species that had not been previously recognized by SCAMIT taxonomists. *Phtisica marina* (Amphipoda: Caprellidae), a European species, had mistakenly been reported by Dean Pasko (DCE) as *Hemiproto* sp A but Chase McDonald had recognized it as something else. After some careful review, and the employment of Don Cadien's recent review of the Caprelloidea (Cadien revised 2015), Dean was able to quickly discover the error in his ID and confirmed *P. marina*. *Phtisica* and *Hemiproto* both have 6-segmented pereopods III and IV and large bulging eyes, but are distinguished in Don's key by the character of the abdominal appendages. Male *Hemiproto* have a pair of small, uni-articulate abdominal appendages accompanied by non-setose lobes; while females have a single pair of uni-articulate appendages. In contrast, male *Phtisica* have three pairs of elongate bi-articulate appendages, and the female with two pair plus a raised anterior projection. The result demonstrated the issue of complacency that can occur, even with experienced taxonomists. In this case, many SCB taxonomists considered *Hemiproto* to be the only option for SCB caprellids with 6-articulate pereopods III and IV, especially with bulging eyes. However, it is prudent to consider alternative species when dealing with embayment habitat, particularly areas rarely sampled such as the estuary near Seal Beach Wildlife Refuge and nearby marina.

29 June 2015, Bight'13 Infaunal QA, LACSD

In Attendance: Larry Lovell, Don Cadien, Chase McDonald, Bill Furlong, Terra Petry (LACSD); Dean Pasko, Tony Phillips (DCE), Greg Lyon, Erin Oderlin (CLAEMD)

Larry re-explained the Match/Not-match tables to those new to the process and described the advantages of the single species vouchering during the reconciliation process. Notes from original records of taxonomist have also been very helpful, so primary taxonomists have been asked to bring their original ID sheets/bench sheets. As well as the benefit of shared information between taxonomists.

Once the data reconciliations have been completed, we'll prepare a synoptic data review table for review. This process will follow the CSD-LACSD meeting later in August.

Larry also reviewed the use of the Discrepancy and Resolution Codes for Erin and Greg, particularly since both were observing the process and not necessarily involved with the identifications. Primary taxonomists were reminded that the Matched data (ID and counts) also has to be copied from the Primary Taxonomist columns and pasted into the Resolved Species and Resolved Abundance Columns of the Match/Not-match data sheet.

In addition we discussed the effort to prepare a set of recommendations of how to handle this for the SWAMP protocols.

Review highlights: Taxonomic QC reconciliations were performed on three ABC, six CLAEMD, and four Weston, Bight'13 samples. The LACSD secondary taxonomists paired up with appropriate primary taxonomists from each lab, rotating between the two labs during the day. Specimens in need of resolution were pulled and reviewed for identification or count correction. Resolutions on not-match taxa for all samples were reached. The proper spreadsheet codes and notations were discussed. A due date for return of the Match/Not-Match spreadsheets was agreed upon.

Bibliography

QA References

Cadien, D.B. 2015. Amphipoda of the Northeast Pacific (Equator to Aleutians, intertidal to abyss): VII. Caprelloidea – a review Donald B. Cadien, LACSD 22July04 (revised 20 April 2015).

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is $15 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $60. All correspondences can be sent to the Secretary at the email address above or to:

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Introduction – At the June 11, 2015 SCAMIT Species List Review Committee, the Committee decided that SCAMIT should codify the method by which species are added to the SCAMIT Species List, and standardize the minimum information required for voucher or identification sheets to be accepted by the Committee. The resulting Guidelines were adopted on July 24, 2015.

Purpose – These guidelines that follow specify the process by which a provisional species may be added to the SCAMIT Species List.

Taxonomic Data – A SCAMIT voucher sheet should minimally contain the following elements:

1. Taxon name including an abbreviated phylogeny (following the strict orthography provided for in the most current SCAMIT Species List)
2. Author and date of origination of the voucher sheet
3. Applicable synonyms (indicate "none" if no synonyms are available)
4. Location(s) for all material examined (Program, Station (including Latitude/Longitude if possible), Date collection, Sample Depth)
5. Diagnostic characters
6. Comparison with morphologically similar taxa outlining differences
7. Images (digital images and/or line drawings at print resolution) that demonstrate diagnostic characters
8. Known geographical distribution (single occurrences acceptable)
9. Literature used

Review – A voucher sheet may take two different, though not mutually exclusive, routes for initial review (below). In each case, the resulting *draft* document should be circulated to all SCAMIT members via electronic media (e.g., General Discussion list server). Barring any mitigating circumstances, members will have 30 days to reply with comments.

1. A provisional voucher sheet can be presented and reviewed at a regular SCAMIT meeting appropriate to the species in question; however,
2. Alternatively, a provisional voucher sheet can be distributed and discussed with known expert(s) in the field.

Publishing – At the end of the review period, the final voucher sheet(s) should be distributed to membership either through publication in a newsletter and/or electronically via the General Discussion list server. Following publication, the voucher sheet will be posted in the taxonomic toolbox on the SCAMIT website.

Deadline – Voucher sheets need to be published according to above guidelines no later than **June 1** to be included that year's edition of the SCAMIT Species List (published on July 1 of each year).

These requirements go into effect upon their publication at SCAMIT.org on the date indicated therein. The Species Review Committee will be the final arbiter as to which taxa will be included in the Species List. **See Example Voucher Sheet** (page 2).

SCAMIT Voucher Sheet

Species: *Nuculana* sp A
Group: Nuculanidae

Vol. 25, No. 3

Date examined: 11 September 2006
Vouchered by: P. Valentich-Scott & K. Barwick

Material Examined: 3 spm: CSD Sta. B11(2), 14JUL92, 288 FT, SBMNH#80296
1 spm: CSD Sta. B11(1), 14JUL92, 288 FT, SBMNH#80298
1 spm: CSD Sta. B5(2). 14JUL92, 200FT, SBMNH #80297
14 spm: CLAEMD Sta. FB17, SMB, 25JUL05, 115m
1 spm: LACSD Sta. 9B JUL96

Synonyms: *Nuculana elenensis* of authors SCB not (G. B. Sowerby I in Broderip and G. B. Sowerby I, 1833)
Nuculana sp SD1 Barwick, 1992

Description: Shell periostracum silky, with lighter colored streaks radiating from the umbone to the outer margin of the shell (seen in dry specimens); color is light tan to dirty white (Fig. 1-3) Sculpture of slightly rounded commarginal ridges evenly spaced ending abruptly at the posterior-dorsal slope. Posterior produced in sharp point, acute. Shell moderately inflated with narrow escutcheon. Lunule shallow, narrow (Fig. 3). Length to 6 mm.

Related Species: *Nuculana elenensis,* unlike *N.* sp A, has a pointed strongly recurved posterior. *N. taphria* (Dall, 1896), when compared to *N.* sp A, has a more rounded, produced posterior. The commarginal sculpture of heavy ribs becomes obsolete along the posterior-dorsal slope. *N. penderi* (Dall & Bartsch, 1910) has a shorter, less acute posterior, slightly recurved in larger specimens. The shell of *N. penderi* is typically plumper and can reach a much larger size than *N.* sp A. *N. eburnean* (G. B. Sowerby, 1833), a panamic species, possesses an acute pointed posterior but has fine dense commarginal sculpturing.

Distribution: Point Loma to Santa Monica Bay, California. Depth for CSD records: 60 – 200 m.

Comments: Historically this species has been identified as *N. elenensis* by workers in the SCB. Based, in part, on these records Coan, et al (2000) reported the distribution for *N. elenensis* to occur as far north as Santa Monica Bay. Subsequently Coan and Valentich-Scott (in preparation) now believe it to be restricted to the Panamic Province. A comparison of the SCB material with the images of the syntypes from the BMNH bears this out. All southern California records for *N. elenensis* are in doubt.

Literature: Coan, Eugene V., Paul Valentich-Scott and Frank R. Bernard. 2000. Bivalve Seashells of Western North America: Marine Bivalve Mollusks from Arctic Alaska to Baja California. Santa Barbara Museum of Natural History, Santa Barbara, California. 764 pp.

SCAMIT Voucher Sheet

Species: *Nuculana* sp A

Group: Nuculanidae

Vol. 25, No. 3

Fig. 1 – CLAMED: FB17/SMB, 115m, 25JUL05 (Length ranges from 5.5 mm to 2.5 mm.) Dry mount

Fig. 2 – LACSD: 9B 7/1996 (length = 4.9 mm) Dry mount

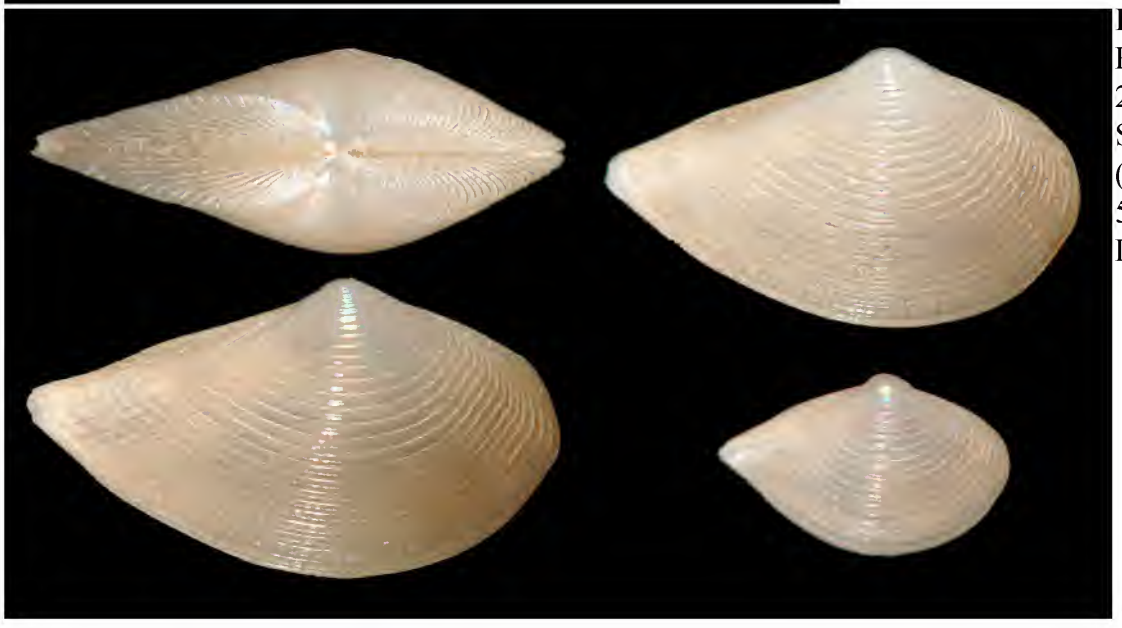

Fig. 3 – CSD: B11(2), 14JUL92, 288 FT, SBMNH#80296 (Length ranges from 5.2 mm to 2.6 mm.) Dry mount

SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

July–December, 2015 SCAMIT Newsletter Vol. 34 Nos. 2–4

Aperture and lateral views of *Pseudomelatoma* sp OC1 Barwick 2014 (Bight 2013 Station 9161, 17JUL2013, 50m)

This Issue

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

Publication Date: 12 February 2016

13 JULY AND 2 SEPTEMBER 2015, BIGHT'13 QC RECONCILIATION, LACSD

The July and September 2015 SCAMIT meetings were related to the Southern California Bight Regional Monitoring Program (Bight'13) infaunal identification QC. They continued the Bight'13 re-identification/reconciliation meetings that began in June and reported in NL Vol. 34, No. 1. As before, these meetings involved comparison and review of the many species reported by the originating taxonomist and re-identified by a secondary (QC) taxonomist. Taxonomists representing each of the seven laboratories participating in Bight'13 infaunal taxonomy attended these meetings. This effort is wide-ranging and extremely beneficial for validating reported data and helping taxonomists reconcile their identifications, and providing SCAMIT with direction for future meetings and areas of taxonomic intercalibration in need of work.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

27 OCTOBER & 1 DECEMBER 2015, SYNOPTIC DATA REVIEW MEETING, SCCWRP

The October and December 2015 meetings were used for the Synoptic Data Review (SDR) of the polychaete and non-polychaete data, respectively. At these meetings the regional infauna data – species data summarized by abundance, frequency of occurrence, laboratory, and habitat – are compared for the entire Bight survey. Differences in reported species that were not discovered through the re-identification/reconciliation process are discussed and resolved, and

Participants of December 2015 non-polychaete Synoptic Data Review meeting, hosted by the Los Angeles County Sanitation District Marine Biology Laboratory. From left to right: Wendy Enright, Dean Pasko, Megan Lilly, Kelvin Barwick, Terra Petry, Greg Lyon, Chase McDonald, Larry Lovell, David Gillett, Nick Haring, Matt Hill, Katie Beauchamp, Erin Oderlin, Danny Tang, Robin Gartman, Tony Phillips (hiding behind RG), Ken Sakamoto, Laura Terriquez, Ron Velarde, Don Cadien

data is consolidated as necessary to ensure a uniform treatment of taxa across all laboratories and habitats. Following this meeting and the conclusion of the resulting data changes, the final dataset is generated and data analysis may begin in earnest. Stay tuned for the report documenting the benthic conditions in the Southern California Bight. Previous reports from Bight'94, Bight'98, Bight'03 and Bight'08 can be found at www.sccwrp.org (Research Areas/Regional Monitoring).

12 SEPTEMBER 2015, SCAMIT EXECUTIVE COMMITTEE ANNUAL MEETING

Attendees: Don Cadien, Dean Pentcheff, Larry Lovell, Dean Pasko, Erin Oderlin, and Leslie Harris

Larry began the meeting by describing the year's three biggest accomplishments. The Bight'13 meetings were a huge success in terms of voucher confirmations, collaboration on specimens for FID (further identification), and generally getting people together to discuss the taxonomy of local species. Finally, the clean-up of the Taxonomy Toolbox has begun and we have had several meetings that addressed certain taxa (e.g., sipunculids, ascidians). The Taxonomic Database Tool is on the web, along with a User's Guide. The Database Tool has seen a lot of use from Don who is using it extensively for his arthropod reviews; but has otherwise been underutilized. This fact generated discussion about how to turn that around. Leslie asked about whether a Google search hits the Database Tool? It does not. Dean Pentcheff mentioned that it can be engineered to have Google "hit" the database tool by telling Google how to "find" it more easily. We also discussed putting the Tool more prominently on the website, and continuing to foster its usage. Hopefully with its more prominent position on the SCAMIT webpage, members will be encouraged to begin using the tool.

Dean Pentcheff also mentioned that Regina Wetzer and he are embarking on a new taxonomic project focusing on marine invertebrates, now that their involvement in the insect study at the NHMLAC is complete. This new focus has several goals in common with SCAMIT's. Generally, Regina wishes to create a single point of reference for SCB marine invertebrate taxonomy. Such a direction might align well with the SCAMIT Database Tool. We discussed setting up a separate meeting to talk about how the two organizations' goals may overlap. Don asked whether such a partnership might require SCAMIT to reconsider its limitation of reporting monitoring data and agency records, etc. Dean Pentcheff countered that the effort didn't require such a change, that he and Regina have an idea to create a system that meets needs at multiple levels and different purposes. Larry brought up the past efforts between SCAMIT and CBRAT, the more recent efforts involving Dancing Coyote Environmental, and the potential for coordination across several groups, in particular the possibility of having the NHMLAC host the CBRAT website.

Larry closed his remarks with a comment about succession of leadership within SCAMIT. How can we encourage and develop members to fill-in as the old guard begins to retire? We need folks to take the lead on generating taxonomic information and leading workshops, as well as taking on SCAMIT leadership positions (e.g., president, secretary, etc.). This lead to some general discussion and a wonderful segue to Vice President Leslie's summary of SCAMIT meetings.

Leslie noted that she has been having problems getting volunteers, other than the usual suspects, to lead meetings, and those folks are beginning to burn out. We're continuing to address the Taxonomic Toolbox, which has training benefits, fitting within SCAMIT's mission and goals. However, one suggestion was to try to foster a mentorship approach where new and old guard team to lead a meeting on a particular topic. Since Erin, a taxonomist-in-training, was present

as the new Treasurer, there was some discussion (reassurance) that the person leading a meeting need not be the expert on a problem. Rather he/she need only be a conductor/facilitator of a meeting. Leslie suggested bringing data to a meeting (e.g., morphometrics data on species variability as a topic for discussion). Dean Pentcheff suggested that perhaps focused topics (genus- or species-level topics) might be more helpful and less intimidating. Erin suggested that "problem-driven" meetings vs. taxa-driven ones might also be helpful. She noticed that their training with different taxonomists from different agencies has been an eye opener as to approaches, etc. More general questions were discussed, such as variability of character states and discussions about how to address that variability. Other ideas that might foster helpful discussion include when to pull back on your identification and when to move forward with erecting a provisional species. We also discussed the need to encourage the "old guard" to speak slowly, and at a level less technically intimidating to introductory level taxonomists. Sometimes we get stuck in the minutia and lost in esoteric topics, forgetting that others less familiar with the taxa under discussion may not be following along very well. In the end, we asked Erin if she, Greg Lyon, and Craig Campbell could come up with a set of questions that might form good discussion topics. Don then suggested that one topic for a meeting could be "How does an organism's natural history and ecology show in its taxonomy?"

Generally, however, Larry noted that the Taxonomic Toolbox efforts can go on for years, and create good topics for SCAMIT meetings in the absence of specific taxonomic workshops.

Dean Pasko suggested that one of our failings of leadership is following up on the Action Items generated at different meetings. For example we've not followed up well on the action items from the toolbox meetings. So Dean was given the task of getting the Action Items from toolbox meetings and forwarding them on to Larry and Leslie for consolidation and follow up. [Editor's note: I'm working on it!]

That topic led to the Secretary's summary of the status of the Newsletters (NL). Dean provided the Executives with a table summarizing the status of each NL. Larry commented that we used to get summaries from the presenters in the past, which then became incorporated into the NL minutes. In other words, presenters provided their own minutes, and the Secretary's job was to compile, edit, and publish. We had some discussion on the best way to handle this topic. Dean noted that he has made an effort to send out draft minutes to the presenter and other primary players soon after the workshop as a substitute for the presenter having to produce a set of minutes. In the end we noted that we should make sure that each presenter provide his/her meeting notes (talking points and presentation) to the Secretary, and that Dean should continue to get draft minutes out quickly for review.

We also recognized the difficult nature of producing the meeting minutes over the past two years due to the many Bight-related meetings, often three and four per 2-month period and involving detailed discussion on individual species, provisional species, etc. This led to discussion of how to deal with the provisional nature of the "voucher/ID sheets" that were created for Bight'13 and presented at the meetings. It was suggested that we include a 2-slide/page pdf of various presentations for inclusion in the NLs, as long as the presenters give their permission. Consequently Dean was assigned the Action Item to get approval for release of the various Bight'13 presentations to the web or in NLs.

In addition, we decided that Larry and Dean should remind each presenter that they will get a set of minutes for review, in a timely manner, and ask them to kindly edit and return them within a week.

Dean Pentcheff, our Webmaster, said "The website is working!" noting that he was happy to continue working as Webmaster. He commented that the recent problem of the SCAMIT email server at LACSD is solvable. [Note from Larry: It was solved by Dean!] He also noted that the Taxonomic Toolbox updates would be no problem, and with the completion of the insect effort at the NHMLAC, his time will be freed-up a little. He never did pursue a website to host the taxonomic images, and that turned out to be a good thing given our discussions of following a different path for hanging images in the website and toolbox.

Don mentioned that the hierarchy of the toolbox is in need of an update to reflect the changes in higher level classifications. Dean explained how the original construct/agreement included linking the hierarchy of the toolbox to the taxonomy in the taxonomic database (still in Ed 7); but the database has never been updated because the two are not linked. There was considerable discussion of the efforts required to synchronize the two.

Our new Treasurer, Erin Oderlin, summarized our financial and membership status. SCAMIT has over 150 paying members – though some are asking where the NLs are – and that we still have $7,000 of potential publication grant money available. There was discussion [again] of how to make that money more available to members with better advertising! Dean Pentcheff thought he could do something more prominent on the website and in the toolbox advertising the availability of this money for out of pocket costs; illustrators, page charges, open access fees, and other direct expenses to those interested in publishing taxonomic information. Our Database fund has $3,267 still left in it. One proposal, to which Leslie quickly volunteered, is to pay some pre-determined amount to update or prepare voucher sheets identified in the Taxonomic Toolbox meetings as being in need of fixing. This idea didn't get too much traction, however, and we concluded the discussion of the treasuery with the idea that overall we're in good financial shape.

Larry brought up the idea of SCAMIT's investment CD, and that Erin continue to research how we might ladder them to build interest on monies not being utilized. We had just rolled over a 9-month CD and could purchase another when the time was right. Our expenses from last year were <$1,000, and we brought-in more than that from membership; However, we had less printing costs than in years past, so that surplus could be a little misleading.

Dean Pentcheff discussed the collaborative university/researcher effort that he and Regina have been developing with UCLA and, more recently, with USC researchers and students. It is similar to partnerships that entrepreneurs do with college engineering students. Their experience with UCLA was excellent, and USC has job experience and research-oriented efforts that they are working with now. Dean thought SCAMIT might be able to develop a partnership to help move along the Database Tool or Taxonomic Toolbox efforts. He volunteered to pursue discussions with UCLA and USC principals for potential collaborations with SCAMIT.

Don summarized the efforts of the Species Review Committee. The Committee was able to get Ed 10 of the List out with only a slight delay. There should be little significant changes in Ed 11, or the process. But Don said that there will have to be another Editor to the Species List, as he may not be able to do it much longer. Once the database synchronization is complete, the Species List editing and new list creation could become much easier. Management/editing will be easier with most changes coming from the SCAMIT Species List Committee by approval of changes submitted by members. We're still looking for a July 1 completion of Ed 11. We didn't implement all the Bight'13 new introductions in Ed 10, but these will be available for addition following the conclusion of the Bight'13 QA meetings.

Before we could finally adjourn, we had an additional discussion of how to handle the taxonomic images that individual SCAMIT members have and how to database those images. We get hung up on the metadata, and the collection system. We revisited Dean Pentcheff's suggestion about bringing in someone from one of the local schools and use the database money to reimbursement the students for fuel, food, and associated costs, while not necessarily providing "pay" for the intern. We need to develop a plan with specific constraints and requirements so that the effort is clear. The NHMLAC-USC effort will begin in the January/February timeframe, but we would first need to develop a list of constraints relative to the workload, task someone with being the single point of contact for oversight, and have the student work to develop the scope according to their ability and time.

Dean Pentcheff then discussed the issues that arose with Guelph (Biodiversity of Life Data Systems, Biodiversity Institute of Ontario, University of Guelph) and the SCCWRP-SCAMIT-Guelph effort that had fallen through years ago. He announced that they are now able to use barcoding technology to identify species and communities. They have made significant efforts towards getting over the backload of stalled projects that were due to the Canadian government taking a more conservative approach to funding (allowing only Canadian-based enterprises to receive government money, not foreign). Consequently many international efforts were abruptly discontinued. Guelph is processing about a million specimens/year now.

He mentioned that Regina and he would be approaching SCAMIT and SCCWRP to backfill the barcoding database that had been developed. Don mentioned that many agencies had continued to collect EtOH preserved materials for this purpose Larry raised the issue of the agencies being asked to help get specimens via their interaction with SCCRWRP and the Annual Research Plan.

As it was now approaching 3:15 PM and we had started at 11:30 AM, it was time to adjourn…so we did!

SCAMIT Treasury Summary

2014 – 2015

Below is the treasurer's report for 2014-15. Once again we are **not** raising dues thanks to so much continued support from all of you! We have over 150 members across the US and worldwide. SCAMIT did not award any publication grants this past year but we have funds to do so. Please help get the word out that these funds are available. As stipulated in our grant policy, we have **$6,806.43** or 25% of our operating budget of $27,225.71, excluding database funds, available for publication grants this year. The taxonomic database tools on our website were maintained by our webmaster. The database expense totaled $480.00

Account Balances (as of 4/29/15)

Checking	$16,998.88
Certificate of Deposit	$10,018.90
Cash	$207.93
Database Fund	$3,267.05
Total	**$30,492.76**

INCOME

2014 Membership dues	$1,870.00
Interest from CD	$5.99
Total	**$1,875.99**

EXPENSES (GENERAL ACCOUNT)

Meeting refreshments	$186.13
Annual Luncheon	$160.00
Website Content & Design	$480.00
Total	**$826.13**

Publication Date: 12 February 2016

Please visit the SCAMIT Website at: www.scamit.org

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is $15 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and $30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $60. All correspondences can be sent to the Secretary at the email address above or to:
SCAMIT
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Long Beach, CA 90815

SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

January–February, 2016 SCAMIT Newsletter Vol. 34 No. 5

Cross section through the dorsum of unknown juvenile hormathid (Anthozoa: Hormathiidae) from Monterey Bay Canyon (322m). Photo by Charles A Phillips, 2014.

This Issue

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

Publication Date: 29 July 2016

11 JANUARY 2016, MISCELLANEOUS PHYLA MYSTERY SPECIMENS NHMLAC

Attendance: Wendy Enright, Megan Lilly (CSD); Don Cadien, Larry Lovell (LACSD); Greg Lyon (CLA-EMD); Tony Phillips, Dean Pasko (Private Consultants); Leslie Harris (NHMLAC)

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

Business: Larry announced that we are almost caught up with past Newsletters. He also opened the nominations for Officers via an earlier email and again at this meeting. The current slate of officers was re-nominated by Tony Phillips, which was seconded by Megan Lilly. The officers present agreed to run again, and we, of course, re-nominated Erin for Treasurer in absentia. Nominations will remain open and can be submitted via the general list server, email, or at the February meeting. Ballots will be distributed via email in February and will be due to Leslie Harris by the March meeting.

It is always good for new persons to become involved, bringing fresh ideas and new energy. The history of Officership in SCAMIT has two trends 1) long tenure and 2) a supportive work affiliation with a POTW. Most officers have been part of POTW agencies, with a few exceptions (Leslie, Don when working for Marine Biological Consultants, Larry when operating as a private consultant, and Dean). Larry encouraged those who work for a POTW to consider becoming more involved with SCAMIT to share their ideas and give back to the organization.

We then discussed the need for meeting topics for 2016-17, lest we be blighted with a polychaete-centric agenda. Regional Bight QA, specifically the synoptic data review (SDR) often generates the need for meeting topics, and this regional survey was no different. Larry noted Erin's comment at the Executive Committee meeting that we don't need to have the same old "experts" lead the meeting. Less experienced members, those with the questions could provide the subject matter. The topic could also be more problem-driven rather than taxa-driven. In essence the meeting could be organized by one or more people with problems requiring resolution but without those individuals necessarily being in charge of providing the answers or preparing to lead a workshop. These individuals might instead be responsible for pulling together a list of specimens to be reviewed, and coordinate with the Vice-President to organize the meeting.

Megan then noted that when she was Secretary she had received comments that the meeting discussion would often become too esoteric and that those people who we are trying to help would get lost in the discussion. They might come away with an answer, but confused as to the how or why we arrived at it.

Tony then brought up several groups that are in need of some attention and resolution, such as Heteronemertea, cirratulids, and pyramidellids. Tony has 20 species of *Turbonilla*, which includes eight species from San Diego that are in need of discussion and sharing. It's the same with *Odostomia*. Megan brought up other phyla that require work, such as *Leptosynapta*, *Listriolobus*, and *Chiridota*. Some of these (e.g., heteronemerteans) were discussed in the Bight-related SCAMIT meetings, but the SDR demonstrated that more work is needed. Megan offered to take some time to review the City of San Diego's lab conventions for certain taxa, and generate a list that might be used to jump-start a meeting or two.

Publication Date: 29 July 2016

And then there is always the problem of keeping up with the literature. For example, Tony brought up the recent papers from the 2014 Nemertean Conference (see Kang et al 2015) who used morphology and sequencing to show that records of *Lineus ruber* from the Pacific coast of North America are actually *Rhamphogordium sanguineus*, as well as Hiebert and Maslakova (2015), also using morphology and sequencing, to show that records of *Micrura alaskensis* Coe 1901 from the northwest and northeast Pacific are actually a complex of five cryptic species.

However, Don argued that this is not the time to address Pyramidellids suggesting that instead we wait until Pat LaFollette's review of Dr. McLean's pyramidellid chapter is available, after which we would have a better idea of what to do. The tome will include about 350 described species from the west coast, some of which will probably be considered invalid from the get-go. Turrids are another example of a group that needs a lot of work, as do the shelled opisthobranchs. Larry added that we should include trawl material in these meetings as well. So a sea cucumber meeting that included trawl organisms could hold a full day.

Don also supported the idea of a different type of meeting: "question-based" meetings instead of "answer-based" meetings. Say for example, choose a phylum and see what we do and do NOT know about that group in order to be good practitioners of that group. Perhaps have people send in questions ahead of time so that they could be addressed during the meeting. Leslie suggested that the morning be a general discussion that generates the questions, with the afternoon providing answers, better defining the questions, or just helping define what needs to be addressed at a later meeting.

Leslie then asked whether SCAMIT should bring in someone to help with some of the problem groups that we wrestled with during this, and previous, Bight surveys (e.g., Dr. Jon Norenburg for nemerteans). SCAMIT could pay for travel and meals in exchange for help resolving our problem taxa. A multiple-day workshop might be required, but that would be great if we could work it out. We would just need to make sure the expert would be able to approach the problems as we do and understand that we could not process our specimens in the same way that he/she might (i.e., with serial sections, etc.).

Tony also brought up the issue we have with certain other problematic animals, such as phoronids and earlier SCAMIT protocols that were established for their enumeration. We tend to see a lot of fragmented specimens that are missing their lophophores in certain environments, but they often go uncounted so as to avoid double counts, a convention adopted when double van veen grabs were used to collect replicate infauna samples.

Megan then suggested that the idea of what to count and not count might also be a topic for discussion and resolution. She recalled being trained at some point that one should only count animals that are likely participants in the trophic structure of the benthos (i.e., a feeding organism at the time of capture). This idea likely was related to the decision of when to count (or not) what appears to be an apparent molt of a crustacean or an epitoke of a polychaete, etc. This led to the thought that perhaps it was time to hold a meeting to discuss general taxonomic conventions to standardize as well as possible inter-lab speciation and enumerations.

Of course, there is the age old question of what groups need provisional species voucher sheets prepared or the most help in resolving troubling species…besides the worms that is. Other meeting topics such as "How to ID this [insert taxon here]," or an even less formal format where those new to taxonomy can bring questions or specimens for resolution to the meeting for help answering the question or performing the identification. Periodic meetings that focus upon a

larger taxonomic group (e.g., Mollusca) where questionable specimens can be brought and we can have general discussions about resources, the known fauna, the species we don't report but that are also possible, useful, and perhaps more importantly, not useful literature.

This led us to an attempt to describe our membership. There are three levels of membership: those with limited experience that don't even know what questions to ask but need assistance identifying the specimens at hand; those with enough experience and knowledge that they know the questions to ask, but are not sure how to answer them; and those older types who have moved beyond the general problems of identifying the organisms and tend to be more interested in the esoteric questions of phylogeny.

Leslie asked that we break from these discussions and get started with the event at hand…blobs of the unknown.

We spent the rest of the morning and afternoon, with only a brief break for a snack graciously provided by the NHMLAC, reviewing jars and vials of unidentified collections. We were able to discard many samples because the specimens were in such poor condition that they no longer retained the characters necessary for a proper identification or were actually something other than a once live organism. Other specimens were identified to broad categories (phyla, families, etc.), with a few specimens identified to species. Overall we identified or categorized a number of specimens: echiuran (*Nellobia eusoma*); bryozoa (*Crisia occidentalis*, *Bugula neveritina* Type D, *Cellaria diffusa*, *Thalamoporella californica*); hydrozoa (*Candelabrum*, sp); Ascidiacea (compound ascidians, *Thaliacea*, *Molgula* sp., *Styela* sp.); Anthozoa (Edwardsiidae, *Halianthella* sp.); sponges; Platyhelminthes (Acotylea); pelagic Nemertea; Molpadiidae; Anomura (*Pagurus aleuticus*); Pleurobranchidae.

Kathy Omura remains hopeful that SCAMIT will be able do this again in February. There are a few odds and ends remaining, mostly the ascidians, stony corals and anemones. She offered to pull out other taxa if that is where the group's interest lies.

18 FEBRUARY 2016, MISCELLANEOUS PHYLA MYSTERY SPECIMENS, NHMLAC

Attendance: Wendy Enright, Megan Lilly (CSD); Don Cadien, Larry Lovell (LACSD); Erin Oderlin, Greg Lyon (CLA-EMD); Ben Ferraro, Kelvin Barwick (OCSD); Leslie Harris (NHMLAC)

The day began with "round robin" introductions as we had a new face in the crowd, Ben Ferraro from OCSD.

Larry then started the business portion of the meeting by discussing the upcoming election for SCAMIT officers. He announced that the current suite of officers had been nominated, but he opened the floor for any other nominations. None were given and so it was moved and seconded to close nominations for this year's election. The ballots will be emailed out by the end of February and will be due March 18th.

How to fill the months ahead with meetings was the next topic.

The March meeting will be held on Tuesday March 22 to discuss polychaetes. The plan is to focus on a few areas that are frequently sources of confusion and consternation: speciating specimens of Lumbrineris when you have only anterior parapodia; distinguishing Euclymeninae sp A vs. B,

among other polychaetes issues. The meeting will be held at the Natural History Museum of Los Angeles County (NHMLAC).

The April meeting will be Monday, April 18th and will look at the issue of *Solamen* versus *Crenella* and other perplexing mollusk issues. The meeting will be held at the Orange County Sanitation District (OCSD).

We were not able to decide on a topic for May. Larry will likely be unavailable to attend a May meeting due to upcoming knee surgery.

Larry also announced that the Southern California Academy of Sciences (SCAS) Annual Meeting will be May 6th and 7th at University of Southern California (USC). SCAMIT has traditionally set up an information and membership table at these meetings. Usually Larry mans the table, but again, due to his knee surgery, he will be unable to perform this duty. We're hoping someone else will volunteer as it is a good outreach opportunity for SCAMIT. We only have the table set up on the first day, Friday, but we are there all day. Whoever does volunteer needs to contact Larry so he can put them in touch with the proper people at both USC and SCAS to coordinate the logistics.

The 12th International Polychaete Conference (IPC) will be held at the National Museum Wales in Cardiff, UK this year from August 1–5, 2016. Larry is looking forward to attending. As for the 13th International Polychaete Conference, an organizing committee has already been formed and consists of several SCAMIT members (Leslie Harris, Bruno Pernot, Larry Lovell, Kurt Fitzhugh, Greg Rouse, Lisa Levin, Jim Blake, Nancy Maciolek, and Christine Whitcraft). If selected at the IPC 12, the 2019 IPC 13 will be held at Long Beach State University to honor to Dr. Reish.

With the business portion of the meeting concluded, it was time to open jars containing "mystery blobs" with all taxonomists present doing their best to identify the contents to the lowest possible taxon. Many of the animals had been preserved for so long that proper dissection and/or identification was next to impossible, but even getting an animal to Phylum, Order, or Family is helpful with regards to the Museum organizing its collections.

To Kathy Omura's delight, the group spent the rest of the morning and afternoon reviewing jars and vials of unidentified collections. This set of samples included primarily stony corals and others listed as "anthozoans." As with the previous attempts, some samples included specimens that could be identified to species while others were identified to broad categories (phyla, families, etc.). The following groups were identified or categorized: hydrocoral (*Stylaster californicus* [formally *Allopora californica*]); Corallimorpharia (*Corynactis californica*), Scleractinia (*Coenocyathus bowersi*, *Paracyathus stearnsii,* unidentifiable corals); Chaetodermatids (*Limifossor fratula, Falcidens hartmanae, Caudofoveata* unidentified); Ascidiacea (*Aplidium arenatum,* unidentified Styelidae); Siphonophora, Spaeronectidae; and unidentifiable Actinaria, Holothuroidea, Enteropneusta, Silicea, Lineidae, Bryozoa, and Sipunculida.

Bibilography

Hiebert, T.C. and S. Maslakova. 2015. Integrative Taxonomy of the *Micrura alaskensis* Coe, 1901 Species Complex (Nemertea: Heteronemertea), with Descriptions of a New Genus *Maculaura* gen. nov. and Four New Species from the NE Pacific. Zoological Science. 32: 615-637.

Publication Date: 29 July 2016

Kang X-X, Fernández-Álvarez FÁ, Alfaya JEF, Machordom A, Strand M, Sundberg P, Sun S-C. 2015. Species diversity of Ramphogordius sanguineus / Lineus ruber like nemerteans (Nemertea: Heteronemertea) and geographic distribution of R. sanguineus. Zoological Science. 32: 579–589.

Please visit the SCAMIT Website at: www.scamit.org

SCAMIT OFFICERS

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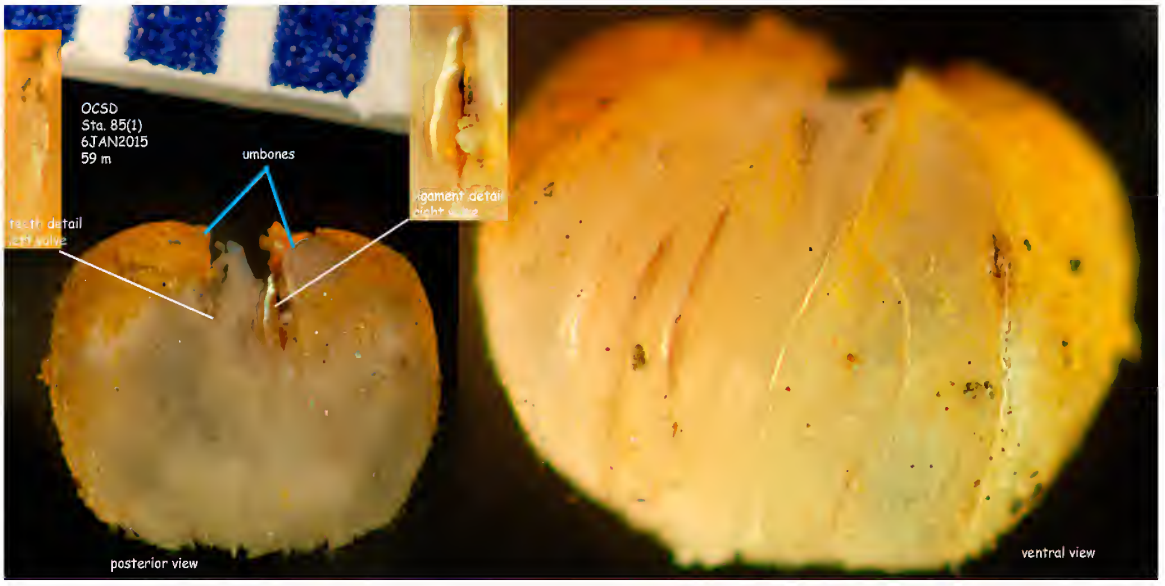
SOUTHERN
CALIFORNIA
ASSOCIATION OF
MARINE
INVERTEBRATE
TAXONOMISTS

March–April, 2016 SCAMIT Newsletter Vol. 34 No. 6



Mytilimeria sp from OCSD station 85(1), January 2015, 59m; Photo by K. Barwick

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

Publication Date: 9 August 2016

22 MARCH 2016, *LUMBRINERIS* SPP, NHMLAC

Attendance: Ron Velarde, Kathy Langan (CSD); Bill Furlong, Brent Haggin, Larry Lovell (LACSD); Greg Lyon, Erin Oderlin (CLAEMD); Kelvin Barwick (OCSD); Leslie Harris (NHMLAC); Karen Green (Leidos)

Business: President Larry Lovell opened the meeting with the business portion. He announced that the Board of Officers was re-elected, and thanked everyone who voted.

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

The upcoming meeting will focus on bivalve and other mollusk taxonomic issues at Orange County Sanitation District (OCSD) on April 18th. The new staff at CLAEMD will be leading this meeting and discussing issues related to *Crenella* uncovered in their voucher collection during recent training activities. Host, Kelvin Barwick, will send out additional information.

The Southern California Academy of Sciences (SCAS) Annual Meeting at the University of Southern California will be held May 6–7. There will be a celebration of the 125th year of SCAS. SCAMIT will have a membership table set up on Friday, May 6th; Erin Oderlin has volunteered to work the table, and she would be very happy to have another person there.

There is no meeting scheduled for May as there is not a topic yet. On June 20th and 21st, there will be a 2-day meeting; morphometrics and various taxa at The Santa Barbara Museum of Natural History. Monday the 20th will be a morphometrics workshop led by Gabriella Navas. We will start the business meeting at 8:30 that day. Tuesday the 21st, Lisa Gilbane will briefly present the work BOEM is doing with Dr. Page at UCSB to document and model the spread of *Watersipora* species at oil platforms. Lisa is interested in recruiting SCAMIT's taxonomic expertise to help identify inverts from this study, mainly amphipods and bryozoans, at a future meeting. Lisa's talk will be followed by presentations by Beth Horvath on her ongoing gorgonian work and Jeff Goddard on nudibranchs and their allies. Paul Valentich-Scott will also make himself available to help resolve any problem bivalve identifications. This will make for exciting days in Santa Barbara. There is no meeting in July as many members will be field sampling. [Editor's note: Unfortunately Gabriella and Beth had to cancel due to unforeseen circumstances. Gabriella hopes to hold the Morphometrics Workshop at a future SCAMIT meeting.]

The International Polychaete Conference 12 is August 1–5 at the National Museum Wales, Cardiff, UK. At this conference SCAMIT would like to propose that IPC13 (in 2019) be held at Cal State Long Beach. It will be the 30th Anniversary of IPC3, which Don Reish organized in 1989!

Leslie Harris gave us an introduction and demonstration of the Coastal Biodiversity Risk Analysis Tool (CBRAT). She attended a workshop recently and told us that CBRAT was originally used to track and report invasive species as well as commercially important species. This large ecoinformatics platform has been greatly expanded over the past several years. It contains information on approximately 20,000 species, ranging from Alaska to the Gulf of California. Some of the categories of information included are Taxonomy, Biogeography ("eco-regions"), Abundance (categories), Environment, Life History (trophic levels), Specialization,

Morphology & Physiology, Invasion, and Comments. For more information, see the CBRAT website at www.cbrat.org

Next, Leslie shared some videos from Kelly Dorgan of various polychaetes, including *Cirriformia* and *Sternaspis* burrowing through a clear, viscous gel. It was very interesting to watch live worms expand and contract their bodies as they adeptly moved through this medium.

Then it was time to examine specimens. We started with a specimen of *Petaloclymene* that has a slightly different stain pattern than *P. pacifica*; there is a thin unstaining line at setiger 8, that interrupts the solid stain that extends past setiger 8 in *P. pacifica*. This worm was collected from San Diego Bay during Bight'13 sampling. Leslie commented she has seen it from SPAWAR samples (located in San Diego Bay) and showed us her illustrations of the staining pattern. Larry noted it is common at 30m stations. For Bight'13, this was recorded as *P. pacifica* but probably should be called *Petaloclymene* DC1, according to Larry. Larry brought out a very large specimen of *P. pacifica* from station C4, Newport Canyon, from a depth of 200m. The dorsal pores were clearly visible on setigers 8, 9, and 10. Larry gave the specimen to Karen Green for dissection.

While people were examining specimens Larry started a slide show of SCAMIT's Twenty Year Anniversary, featuring founding members and officers during the years 1982–2002. This slide show can be found on the SCAMIT website.

After lunch Larry began his presentation on the identification of anterior ends of *Lumbrineris* spp. He reviewed the resources available in the SCAMIT toolbox for Lumbrineridae. The benchmark Larry uses for identifying anterior ends is the specimen must have at least 10 setigers. If the specimen has fewer than 10 setigers, back off to species ("sp"). To determine acicula color, view the anterior acicula. Within a sample, Larry's methodology is to look at the longest specimen first, then work your way to shorter and shorter animals, focusing on examining post-setal lobe morphology at setiger 10.

Lumbrineris sp E is the same as the old *Lumbrineris* sp D of Lovell. *L. latreilli* is a Mediterranean species and may be *Lumbrineris* sp E. The jaws of these two species need to be examined. Larry suggested that *Lumbrineris* sp E should be described as a new species with *L. latreilli* of authors NEP (not Audouin & Milne-Edwards) as a junior synonym.

Lumbrinerids with dark acicula and composite setae starting on setiger 1 from local SCB samples are primarily *Lumbrineris ligulata*, *L. index*, and *L. japonica*. We examined large specimens of each of these three species and focused on the morphology of the postsetal lobes on setiger 10. The postsetal lobe of *L. ligulata* is symmetrical and rounded. The postsetal lobe of *L. index* is evenly tapered to a point. The postsetal lobe of *L. japonica* is rounded on the ventrum then tapers to a point extending out from the dorsum. A secondary character for *L. japonica* is its prostomium is more rounded than *L. ligulata* and *L. index*. Also, *L. japonica* usually has reddish brown pigment. We reached consensus that we could distinguish these three species based on postsetal lobe morphology of setiger 10. It was noted that these specimens are large, and it might be more difficult to distinguish smaller specimens.

Lumbrinerids with yellow acicula and composite setae starting on setiger 1 from local SCB samples are primarily *Lumbrineris cruzensis*, *L. limicola*, *L. latreilli*, and *Lumbrineris* sp E. We examined large specimens of each of these four species and focused on the morphology of the postsetal lobes on setiger 10. The postsetal lobe of *L. cruzensis* is asymmetrically rounded

with the dorsal portion larger. The postsetal lobe of *L. limicola* is rounded on the ventrum then tapers to a point extending out from the dorsum. The postsetal lobe of *L. latreilli* is broader at the base than *L. limicola* and the dorsal tip has a slight dip before the end. The postsetal lobe of *Lumbrineris* sp E is tapered to an upwardly (dorsal) pointing tip. We reached consensus that we could distinguish these four species based on this character. It was noted, again, that these specimens are large and it might be more difficult to distinguish smaller specimens.

Leslie showed us an image of a methyl green stained Lumbrinerid that had a pattern of triangles along the length of the animal. The bases of the triangles lined up with the setal fascicles; the tips of the triangles reached towards the mid-dorsum of the animal. She commented that she has seen other stain patterns on Lumbrinerids and suggested we try staining our specimens with methyl green.

Ron and Kathy brought a specimen of *Eclysippe trilobata* from San Diego, station 8438, depth of 530m that had some slightly different character states than our usual *E. trilobata*. Leslie examined the specimen and commented that there were no gaps between the branchiae, branchiae are large, palae are longer but still thin, different stain pattern, and the elongation of abdominal setigers is not as pronounced. The conclusion is that this animal is probably a different species, and a provisional voucher sheet should be produced.

18 APRIL 2016, MOLLUSCA, OCSD

Attendance: Erin Oderlin, Greg Lyon, Craig Campbell (CLAEMD); Terra Petry, Chase McDonald, Larry Lovell, Don Cadien (LACSD); Russel Carvalho (SFPUC); Mike McCarthy, Kelvin Barwick, Ken Sakamoto, Ernie Ruckman, Danny Tang, Ben Ferraro (OCSD); Megan Lilly, Wendy Enright (CSD); Tony Phillips (private contractor).

Business: Because no one had offered up a topic for May, Vice President Leslie will likely call a meeting to discuss one of the many remaining polychaete issues in need of resolution. Larry reminded everyone of the morphometric and mollusk meeting at the Santa Barbara Museum of Natural History on June 20 & 21.

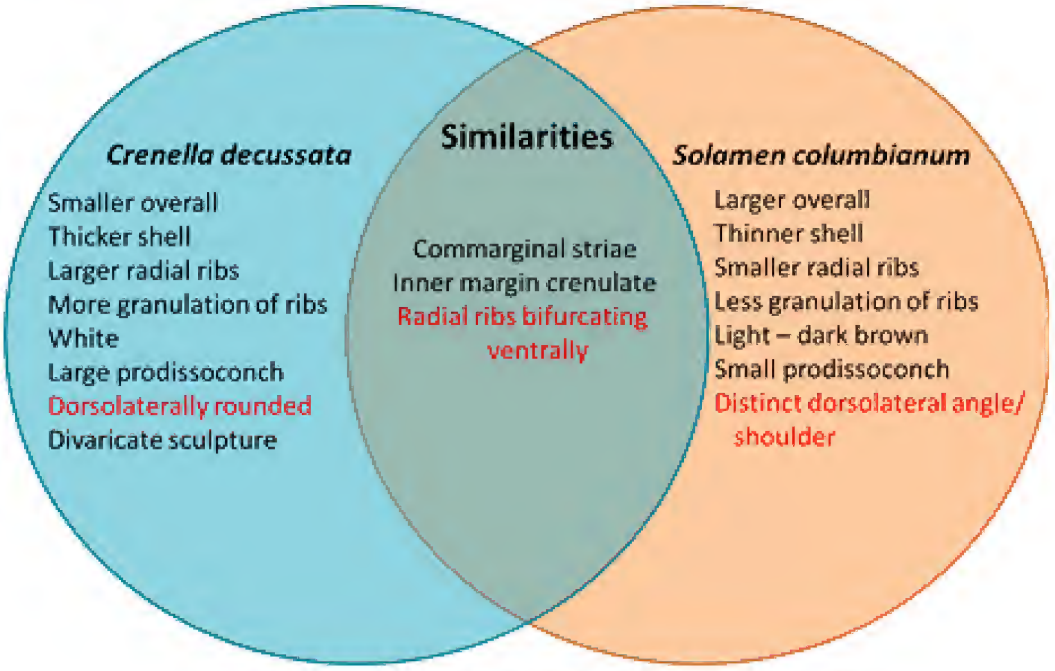
Larry also announced the sale of Don Cadien's literature library, the proceeds of which will be donated to SCAMIT. Don's listing of 11,500 reprints will be auctioned off for $8,625 (or about $.75/reprint). Larry asked if the members on hand had an idea for a minimum bid. Shipping would not be included in any offer, and the buyer would have to arrange for the shipping separately.

Following the business portion of the meeting, Erin Oderlin got things off the ground with a presentation of the City's investigation into small, white to yellowish, ribbed bivalves: *Crenella* vs. *Solamen*. After having been recently trained on Mollusca, Erin, Greg, and Craig ran into some problems distinguishing small specimens of *Crenella decussata* and *Solamen columbianum*. Simply, they were not clear on how to handle the small specimens, and when trying to identify them according to their recent training, they encountered some confusion over the interpretation of certain characters and character states.

Erin presented images of their specimens of *Crenella decussata* and compared them to images prepared by Kelvin (B'08, Station 7493). She followed with *S. columbianum* images (from holotype) and CLAEMD collections (SMB Station NA3, 7/14/2015), along with the illustration from Dall (1897). Kelvin questioned whether the Dall illustration truly represented the pictured

specimens, perhaps because of the seemingly emphasized ribbing. The side-by-side comparison showed a coarser ribbing/beading in *C. decussata* vs. *S. columbianum*. Don interjected that *Solamen* has nearly twice as many ribs than *Crenella*; however, Erin replied that counting the ribs is not practical for juveniles. Greg had spent time counting ribs in juvenile specimens of the two species and found the difference can be subtle and difficult to apply consistently; however, the effort yielded other characters of shape and sculpture that could be used to separate the species across a range of sizes. CLAEMD staff encounters juveniles of both species together in the same sample, although *Crenella* is generally found in coarser sand stations. Tony mentioned that he also sees *Crenella* in coarser sediments. Don countered that you can get both specimens in muddy sand sediments. *C. decussata* is generally a small species with "large" specimens reaching a whopping 4 mm.

Erin also presented an interesting Venn diagram comparing the published and observed characters used to distinguish *C. decussata* and *S. columbianum*.



Some wonderful discussions ensued regarding clarification of the following subjects - "divaricate" vs. "bifurcating" sculpture, "terminal" vs. "prosogyrate" umbone, and prodissoconch size, among other topics.

The presentation next focused on some of the more confusing characters, to which CLAEMD staff provided some clarification.

- The prodissoconch: The comparison photo of juvenile specimens clearly showed that *S. columbianum* had a much larger prodissoconch that extended about 1/2 the length of the shell, whereas that of *Crenella* extended only 1/4 of the shell. Furthermore, in SCAMIT NL Vol. 4, No. 5 (1985) there was mention of *S. columbianum* having a "larger prodissoconch" than *C. decussata*. However, in the MMS Atlas in 1998, Paul Valentich-Scott states

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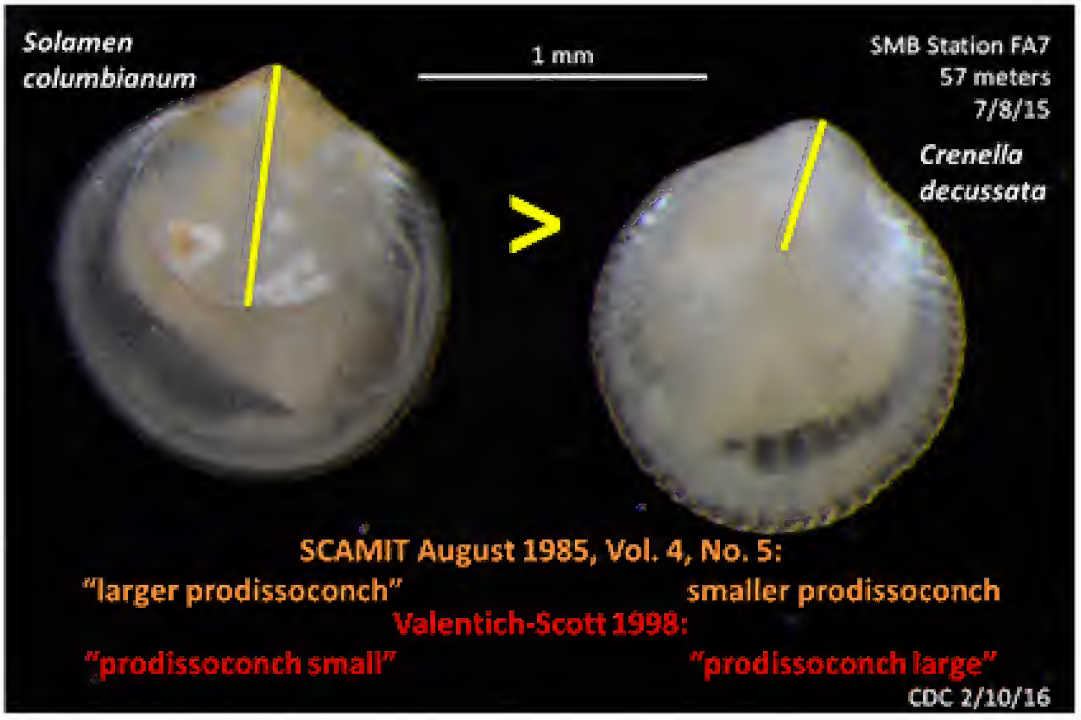
"prodissoconch small" for *S. columbianum* and "prodissoconch large" for *C. decussata*. Everyone suggested that Erin send the slide (see below) to Paul Valentich-Scott at SBMNH and request clarification as to what Erin had portrayed relative to what Paul described back in 1998. [In an email communication with Erin, Paul responded that the "comparison of 'large' and 'small' (in descriptions can be) pretty defective (because) they are always relative to something. These comparisons refer to the full sized shell, and seldom work well with smaller specimens like (the juveniles pictured in the slides)"]. Thus, the *Solamen* prodissoconch **is** small, *when* compared to a full-sized adult shell at 25 mm. Similarly for *Crenella*, its prodissoconch **is** large *when* compared to its adult shell which is usually < 5 mm."



- Bifurcating radial ribs: CLAEMD staff (Greg Lyon) found that both species have bifurcating radial ribs, which were especially easy to view when the specimens were dried. This lead to discussion of what "divaricate" means, especially as used by Keen and Coan (1974). Did they mean bifurcating? CLAEMD staff believes so because only *Crenella* has truly divaricating radial lirae. They found that bifurcate and divaricate has been used inter-changeably; however, they are not the same and divaricating is applicable only to *Crenella*. Some of this confusion stems from the use of "divaricating' and "bifurcating" characters states in past SCAMIT NLs.

CLAEMD proposed several differences for distinguishing the two species:

- *S. columbianum* has a distinct dorsolateral angle vs. the evenly rounded dorsolateral edges in *C. decussata*.
- All of the ribs radiate from (or originate from) the umbo in *Solamen*, but the lateral ribs of *Crenella* divaricate from the central radial ribs, and thus have two origins to the ribbing.
- *Solamen* often has sediment adhering to the shell; whereas *Crenella* is typically a clean, white shell.

Erin finished with a nice picture showing the divaricate ribs along the anterior end of *Crenella*, as well as the very distinctively beaded ribs.

The presentation concluded with an encouraging discussion of the benefits of pulling together information for a presentation, to which people chimed in that training also serves as a good learning tool. Hence, everyone should make an effort to pull together information for a SCAMIT workshop. It can only help to crystalize and resolve taxonomic problems.

Don pointed out that our locally reported species, *Crenella decussata*, is a widely distributed species originally described from the Atlantic. On going molecular investigations are likely to split this single species at some time in the future.

Kelvin next had the floor and shared pictures of *Mytilimeria* sp (Lyonsiidae), a new record for SCAMIT. He took the photo with their new Leica photo microscopy set-up. The identification of the specimen came from discussions on the SCAMIT list server over the past month with Paul Valentich-Scott, SBMNH. He mentioned that members of *Mytilimeria* are often found in association with sponges and ascidians, but Kelvin's specimen was found by itself. He showed a comparison of his specimens to images of *Mytlimeria nuttalli* from Coan et al (2000). Wendy commented that the valves were extremely inflated and that the images do not accurately show that trait. Kelvin concurred.

Kelvin then presented a few problems that he discovered during the process of training CLAEMD staff in molluscan taxonomy.

Problem #1: *Modiolus* sp. Juveniles have routinely been recorded as *Modiolus* sp, especially individuals below 35 mm (per SCAMIT NL 1985). Kelvin had been speciating *Modiolatus neglectus* at smaller sizes based on the presence and shape/character of the hairs on the shell. So the question was whether or not we should begin backing off to sub-family (Modiolinae) instead of genus (*Modiolus*) since two modiolid genera are possible. A related question is, "What should the size limit be?" CSD folks suggested that they use 1 cm as the size limitation. Wendy noted that at the 35 mm limit, you begin seeing the more "adult" character states associated with shell outline. Kelvin was offering up the idea of using the hair morphology to distinguish the couple of potential Modiolinae in the SCB. He showed pictures of the hairs from *Modiolus capax*, which are more fan-like, whereas the *Modiolus neglectus* shell has broad scale-like structures. Don suggested adopting the CSD 1 cm limit and look for the character of the hairs and scales. Coan et al. (2000) has a good comparative table and illustrations of these different morphologies. Wendy questioned whether or not the hairs were reliable on small specimens, thinking that their morphology could be affected by environment rather than systematic differences. Don mentioned that habitat defined some of the distribution. Russell discussed the City of San Francisco practice of distinguishing *Modiolus rectus* vs. *M. capax*, using the distance between the teeth (or what they have been calling crenulations) based on an outdated key. The discussion yielded the following convention (draft):

- Specimens >2 cm can be identified to species using a combination of characters outlined in Coan et al. (2000) (This negates SCAMIT's 1985 "35 mm" rule.)
- Specimens 1–2 cm can be identified to species using the shape of the shell and/or the periostracal setae.

- Specimens <1 cm or any specimens that are unidentifiable using the characters above should be placed in the Subfamily Modiolinae (Historically, records of *Modiolus* sp juvenile can be placed in Subfamily)

Problem #2: *Protothaca* sp: Juvenile *Protothaca* are difficult to separate from *Chione*. You can't differentiate them without looking at the pallial sinus. The idea was that if a deep pallial sinus was present, you could identify the specimen to *Protothaca*. But *Protothaca* has been split into *Callithaca* and *Leukoma*, and therefore you can no longer back off to *Protothaca*. Both *Callithaca* and *Leukoma* are shaped like *Chione*, but *Chione* has a shallow pallial sinus. So when faced with small specimens, one must back-off to subfamily Venerinae when they are too small to identify to species. In contrast, Tony suggested that the generally similar *Venerupis* can be identified by the elongated shell, even at 1 mm sizes.

Juvenile "*Protothaca*" convention (draft):

- Those juvenile Venerids that superficially resemble *Chione* sp should still be opened to observe the pallial sinus (This was first outlined in the "Micro-Bivalvia of Southern California and Central California" (SCAMIT, 2004)
- Those with a shallow pallial sinus should be recorded as *Chione* sp (no change)
- Those with a deep pallial sinus should be placed in the Subfamily Venerinae (Historically, records of *Protothaca* sp juvenile can be placed in Subfamily)

Problem #3: *Kurtiella* "*compressa*". The species of "*Kurtiella*" that occurs in the SCB is actually a new species of *Kurtiella*, originally called *Mysella* sp D SCAMIT 1998. The question is whether to report it as *Mysella* sp D SCAMIT 1998 or *Kurtiella* sp D (SCAMIT 1998). The application of *Kurtiella* results from a mis-identification in Coan et al. (2000), but has since been clarified by Coan and Valentich-Scott (2012). The final decision was to report the species as *Kurtiella* sp D (SCAMIT 1998).

Tony mentioned the use of Shirlastain on bivalves to help delineate internal structure. It works with the pallial sinus, but it disappears quickly so you must look at it right away. Megan mentioned that it helps with revealing the presence of cerebral sense organs in the nemertea as well.

Lunch followed, and the Secretary made a hasty exit!

After lunch, we started looking at Nuculanidae. In preparation for a MS Kelvin has been digging around in the museums (SDMNH, NHMLAC, and CAS, thus far) for something on *Nuculana* sp A. A few possible specimens were found, often as part of mixed lots from the SCB. All the NHMLAC lots of *N.* sp A come from Bight projects material. However, there is a large amount of still unexamined material at CAS. It will require at least one return visit, if not more, to review it all.

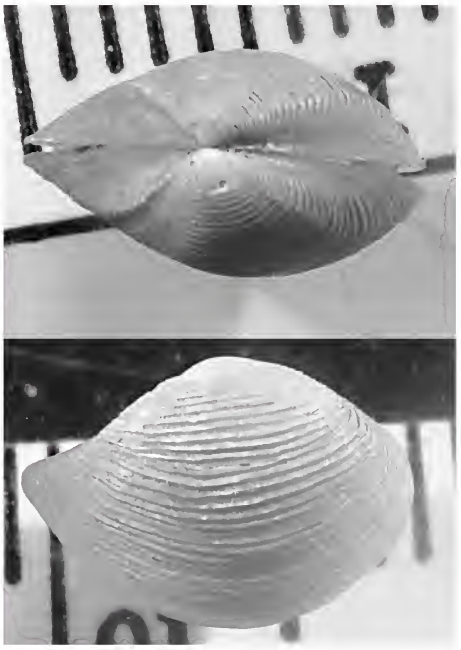


Figure 1. *Nuculana penderi* (Dall & Bartsch); dorsal and lateral views; tick marks=1 mm (paratype CAIZ064424; Canada: British Columbia: Vancouver Island: Barkley Sound, Ucluelet to ship channel. 8-36 fm)

Figure 2. *Saccella* sp OC1 Barwick, 2015; left and right lateral views; scale bar = 2 mm (OCSD Sta. 57(1), 10JUL2014, 195 m)

At CAS the paratype for *Nuculana penderi* was observed and photographed (Fig. 1). This reminded Kelvin of the question regarding the identity of our local specimens of *N. penderi* raising, in his mind, the possibility of yet another cryptic species. Its possible relationship to *N.* sp A was discussed but no consensus was reached.

Next a possible new species of *Saccella* was presented to the group. Kelvin stated that, after consultation with Paul Valentich-Scott, it was decided that it most closely resembled *Saccella laeviradius*, a panamic species. But the size, in relation to the tooth count, made that comparison problematic. Kelvin has decided to erect an in-house provisional for the time being, *Saccella* sp OC1 (Fig. 2). While training at CLAEMD a second specimens was found in their Santa Monica Bay samples.

Next, Tony showed a picture of a *Nuculana* with a squared off rostrum and heavy commarginal ribbing (though finer than *N. hamata*) that also seemed unusual.

Finally, Wendy had brought a few specimens for the group to look at including an as yet unidentified *Neomeniomorpha*, a *Periploma* with a deep sulcus that seemed unlikely to be one of our local species, and a tiny bivalve that was ultimately deemed a Lasaeidae. She also confirmed that The City of San Diego's vouchers for *Solamen* and *Crenella* matched those of CLAEMD.

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